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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,646	10/24/2003	Che-Kuei Mai	MAIC3001/EM	7615

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BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

SCHECHTER, ANDREW M

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/691,646	Applicant(s) MAI, CHE-KUEI	
	Examiner Andrew Schechter	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Light structure with polarizer having fluorescence layer for panel display".

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 6-9 and 14-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 6-9 and 14-17 refer to embodiments of the invention where red light is used to excite a fluorescence layer to produce green or blue light, or green light is used to excite a fluorescence layer to produce blue light. As discussed in *Wiley et al.*, U.S. Patent No. 5,206,747, fluorescent dyes work by absorbing short wavelength light (typically UV or blue) and emitting light at a longer wavelength (typically red, yellow, or

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orange). The embodiments to which these claims refer recite the opposite – absorbing low energy light (red or green) and emitting higher energy light (green or blue). Since this contradicts the basic operation of fluorescence, and the specification does not provide any detail on how this is accomplished, it is not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Claims 6-9 and 14-17 are therefore rejected.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, 10, 13, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by *Mueller-Mach et al.*, U.S. Patent No. 6,844,903.

Mueller-Mach discloses [see Fig. 2, for instance] a light structure of a panel display comprising a back-light module [32, 34] having a light source [34] for generating a first color light [blue, col. 3, line 42]; and a polarizer [24, 40, 42, 46] having at least one fluorescence layer [40, 42] to be excited by said first color light so as to generate a white light or a mixing light in a second color [red or green, respectively]. Claim 1 is therefore anticipated.

Mueller-Mach's device comprises a polarizer disposed on a back light module of a panel display and characterized in that the polarizer comprises at least one fluorescence layer to be excited by a first color light so as to generate a white light or a mixing light in a second color [as above], so claim 13 is also anticipated.

The polarizer is a top or bottom polarizer of said panel display, so claim 2 is also anticipated. The fluorescence layer is disposed between a polarizing layer [24] and a surface protective layer [46] both of said top polarizer, so claim 3 is also anticipated. The polarizer comprises at least one protective layer [46] for protecting the fluorescence layer, so claim 4 is also anticipated. The light source is a light emitting diode [LED, col. 3, line 42], so claim 5 is also anticipated. The first color light is blue, so claims 10 and 18 are also anticipated.

6. Claims 1, 2, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by *Sekiguchi et al.*, U.S. Patent No. 6,646,697.

Sekiguchi discloses [see Figs. 7 and 8, for instance] a light structure of a panel display comprising a back light module [7] having a light source for generating a first color light, and a polarizer [23] having at least one fluorescence layer [col. 12, lines 58-65] to be excited by the first color light so as to generate a white light or a mixing light in a second color. Claim 1 is therefore anticipated.

The polarizer is the top or bottom polarizer in the display panel, so claim 2 is also anticipated. This is also a polarizer disposed on a back light module of a panel display as recited in claim 13, so claim 13 is also anticipated.

7. Claims 1, 2, 5, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by *Flynn*, U.S. Patent No. 5,815,228.

Flynn discloses [see Figs. 5 and 6] a light structure of a panel display comprising a back light module [62] having a light source for generating a first color light, and a polarizer [16] having at least one fluorescence layer [60] to be excited by the first color light so as to generate a white light or a mixing light in a second color. Claim 1 is therefore anticipated.

The polarizer is the top or bottom polarizer in the display panel, so claim 2 is also anticipated. The light source is an LED, so claim 5 is also anticipated. This is also a polarizer disposed on a back light module of a panel display as recited in claim 13, so claim 13 is also anticipated.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10, 11, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Flynn*, U.S. Patent No. 5,815,228 as applied above, and further in view of *Grohn et al.*, U.S. Patent Application Publication 2003/0107692.

Flynn discloses using an LED as a light source, but not that it produces blue light and that the fluorescent layer is yellow. *Grohn* discloses that the LEDs used as white

light sources in backlit LCDs generally do not emit pure white light, but rather blue-white light [paragraph 0012], and that to improve the color closer to white, the analogous fluorescent layer is made yellow [paragraph 0051]. It would have been obvious to one of ordinary skill in the art at the time of the invention to do so in the device of *Flynn*, motivated by the desire to improve the color of the display (make it closer to pure white). Claims 10, 11, 18, and 19 are therefore unpatentable.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Mueller-Mach et al.*, U.S. Patent No. 6,844,903 as applied above, and further in view of *Takahara et al.*, U.S. Patent No. 5,673,127.

Mueller-Mach discloses [see Fig. 2] using a thin film transistor liquid crystal display (TFT-LCD), but does not explicitly disclose using low-temperature poly-silicon (LTPS) TFTs. *Takahara* discloses and teaches making low-temperature poly-silicon TFTs for an analogous device [col. 19, lines 45-62]. It would have been obvious to one of ordinary skill in the art at the time of the invention to do so in the device of *Mueller-Mach*, motivated by the teaching of *Takahara* that poly-silicon is desirable to minimize the occurrence of photo-conduction phenomena, while low-temperature processing "is desirable since a drive circuit can be built in and the display panel can be made at a low price". Claim 12 is therefore unpatentable.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Mueller-Mach et al.*, U.S. Patent No. 6,844,903 as applied above, and further in view of *Perregaux*, U.S. Patent No. 4,217,160, *Kusumoto et al.*, U.S. Patent No. 6,600,529, and *Mori*, U.S. Patent No. 6,646,698.

Mueller-Mach discloses a polarizing layer [24] and a surface protective layer [46], but not an adhesive layer and a plurality of protective layers. *Perregaux* [see Fig. 2], *Kusumoto* [see Fig. 1], and *Mori* [see Fig. 5] each disclose polarizers having adhesive layers and a plurality of protective layers. It would have been obvious to one of ordinary skill in the art at the time of the invention to have these additional layers in the device of *Mueller-Mach*, motivated by the desire to easily attach the polarizer (hence the adhesive layer) and to protect it from damage due to contact with other layers or external objects (hence the plurality of protective layers). Claim 20 is therefore unpatentable.

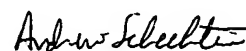
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew Schechter
Patent Examiner
Technology Center 2800
7 March 2005